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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,247

03/09/2005

Michiaki Matsuo

MAT-8671US

2836

23122 7590 06/09/2009
RATNERPRESTIA
P.O. BOX 980
VALLEY FORGE, PA 19482

EXAMINER

HSIEH, PING Y

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

06/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,247	Applicant(s) MATSUO, MICHIAKI	
	Examiner PING Y. HSIEH	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-35 is/are pending in the application.
- 4a) Of the above claim(s) 21-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki (U.S. PATENT NO. 55,181,246) in view of Moriyama et al. (U.S. PATENT NO. 6,571,090) and further in view of Shunichi (JP 10-327130 A).

-Regarding claim 1, Miki discloses a transmission device (**fixed device 2, fig. 4**) comprising a modulator for modulating data by a plurality of modulation methods (**ring modulator 8 as shown in fig. 5 and further disclosed in col. 5 lines 50-53**); and a transmitter for transmitting a radio signal by using a plurality of carrier frequencies (**a privacy voice output signal from the privacy voice output terminal 11 is transmitted through a radio transmitter as disclosed in col. 5 lines 32-38**). However, Miki fails to disclose the transmission device is

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configured to transmit the data repeatedly without changing the transmission communication method during a time period in which a receiving device is configured to switch through a plurality of reception communication methods, each of the plurality of reception communication methods formed by combining one of a plurality of demodulation methods and one of the plurality of carrier frequencies.

Moriyama et al. disclose a transmission device is configured to transmit the data repeatedly without changing the transmission communication method during a time period in which a receiving device is configured to switch through a plurality of reception communication methods, each of the plurality of reception communication methods formed by combining one of a plurality of demodulation methods and one of the plurality of carrier frequencies **(diversity receiver as disclosed in fig. 1, fig. 2, and fig. 4 and further discloses in col. 9 line 66-col. 10 line 52 and col. 12 line 28-col. 13 line 49).**

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the device of Miki to include features as disclosed by Moriyama et al. One is motivated as such in order to provide cost reduction, downsizing, and lightening.

However, the combination of Miki and Moriyama et al. fails to disclose the transmission device transmits the data by changing a transmission communication method to another method following a lapse of time, which

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transmission communication method is formed by combining one of the modulation methods and one of the carrier frequencies.

Shunichi discloses the transmission device transmits the data by changing a transmission communication method to another method following a lapse of time, which transmission communication method is formed by combining one of the modulation methods and one of the carrier frequencies **(as disclosed in abstract, paragraph (57))**.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the device of Miki and Moriyama et al. to include the feature as taught by Shunichi. One is motivated as such in order to improve security.

-Regarding claim 5, the combination further discloses a data divider for dividing data into a plurality of pieces of data and putting each one of those plurality of pieces of the data a number to identify an order of each piece of the data in original data, wherein the lapse of time indicates a lapse based on information about the order **(Shunichi, as disclosed in abstract, paragraph (57))**.

-Regarding claim 11, Miki discloses a reception device comprising a demodulator for demodulating data by a plurality of demodulation methods **(ring demodulator 14 as shown in fig. 5 and further disclosed in col. 5 lines 63-67)**; and a receiver for receiving a radio signal with a plurality of carrier frequencies **(receiver as disclosed in col. 5 lines 32-38)**.

However, Miki fails to disclose the receiving device is configured to switch through a plurality of reception communication methods while a transmission device is configured to transmit the data repeatedly without changing the transmission communication method during a time period, and the reception communication method is formed by combining one of the plurality of demodulation methods and one of the plurality of carrier frequencies.

Moriyama et al. disclose a receiving device is configured to switch through a plurality of reception communication methods while a transmission device is configured to transmit the data repeatedly without changing the transmission communication method during a time period, and the reception communication method is formed by combining one of the plurality of demodulation methods and one of the plurality of carrier frequencies **(diversity receiver as disclosed in fig. 1, fig. 2, and fig. 4 and further discloses in col. 9 line 66-col. 10 line 52 and col. 12 line 28-col. 13 line 49).**

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the device of Miki to include features as disclosed by Moriyama et al. One is motivated as such in order to provide cost reduction, downsizing, and lightening.

However, the combination of Miki and Moriyama et al. fails to disclose the reception device receives the data by changing a reception communication method following a lapse of time, and the transmission communication methods

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formed by combining one of a plurality of modulation methods and one of the plurality of carrier frequencies.

Shunichi discloses the reception device receives the data by changing a reception communication method following a lapse of time, which communication method is formed by combining one of the plurality of demodulation methods and one of the plurality of carrier frequencies **(as disclosed in abstract, paragraph (57))**.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the reception device of Miki to include the feature as taught by Shunichi. One is motivated as such in order to improve security.

4. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki (U.S. PATENT NO. 55,181,246) in view of Moriyama et al. (U.S. PATENT NO. 6,571,090), Shunichi (JP 10-327130 A) and further in view of Granstrom et al. (U.S. PG-PUB NO.2005/0215206).

-Regarding claims 2 and 12, the combination of Miki, Moriyama et al. and Shunichi teaches all the limitations as claimed in claims 1 and 11. However, the combination fails to specifically disclose a switcher of a transmission method, wherein at least one of the modulator is available in plural pieces, and the switcher switches the plural modulators for switching the transmission communication method.

Granstrom et al. disclose a switcher of a transmission method (**selector 55 as shown in fig. 6 and further disclosed in paragraph 40**), wherein at least one of the modulator is available in plural pieces (**modulator 53 and 54 as disclosed in fig. 6**), and the switcher switches the plural modulators for switching the transmission communication method (**as disclosed in paragraph 40**).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the combination of Miki, Moriyama et al. and Shunichi to switch the modulations using a switch as disclosed by Granstrom et al. One is motivated as such in order to provide the possibility for fast switching between different modulation schemes (Granstrom et al., paragraph 6).

5. Claims 4, 6-10 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki (U.S. PATENT NO. 55,181,246) in view of Moriyama et al. (U.S. PATENT NO. 6,571,090), Shunichi (JP 10-327130 A) and further in view of Moon et al. (U.S. PATENT NO. 7,027,782).

-Regarding claims 4, 13 and 17, the combination of Miki, Moriyama et al. and Shunichi teaches all the limitations as claimed in claim 1. However, the combination fails to specifically disclose a transmission communication method notifying section for notifying another device of a communication method desirable to be used on the transmission side; and a communication receivable method reply receiver for receiving a reply whether or not to receive the data by the communication method notified, wherein the transmission device transmits

data thereafter by the communication method accepted by the another device to this another device.

Moon et al. disclose a transmission communication method notifying section for notifying another device of a communication method desirable to be used on the transmission side; and a communication receivable method reply receiver for receiving a reply whether or not to receive the data by the communication method notified, wherein the transmission device transmits data thereafter by the communication method accepted by the another device to this another device **(as disclosed in fig. 7 and 13 and further disclosed in col. 25 lines 48-61)**.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the transmission device of Miki, Moriyama et al. and Shunichi to include the feature as disclosed by Moon et al. One is motivated as such in order to provide a data transmission/reception apparatus and method for improving performance of a radio communication system.

-Regarding claims 6 and 15, the combination further discloses a re-transmission request receiver for receiving a request of re-transmitting a missing piece of the data from another device, wherein the transmission device re-transmits the missing part of the divided data based on the request **(Moon et al., col. 11 lines 59-60)**.

-Regarding claims 7 and 16, the combination further discloses the transmission device receives, at the re-transmission request receiver, information

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about a reception communication method available in the another device together with the re-transmission request, then the transmission device re-transmits the missing piece of the data requested re-transmission by an available communication method among the transmission communication methods corresponding to the communication methods available on the reception side, and when the transmission device receives an acknowledgement from the another device of the missing piece of the data re-transmitted based on the request, the transmission communication method used for successful re-transmission of the missing piece of divided data can be used for transmitting pieces of divided data thereafter **(Moon et al., col. 11 lines 27-64)**.

-Regarding claim 8, the combination further discloses a demodulator for demodulating data by the plurality of demodulation methods **(Miki, ring demodulator 14 as shown in fig. 5 and further disclosed in col. 5 lines 63-67)**; and a receiver for receiving a radio signal with the plurality of carrier frequencies **(Miki, receiver as disclosed in col. 5 lines 32-38)**, wherein the transmission device receives data by changing the reception communication method following a lapse of time **(Shunichi, as disclosed in abstract, paragraph (57))**, then wherein the transmitter transmits the data together with information about a reception communication method desirable to be changed, then wherein the receiver waits and receives information to be transmitted from another device by a communication method corresponding to the communication

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method desirable to be changed (**Moon et al., as disclosed in fig. 7 and 13 and further disclosed in col. 25 lines 48-61**).

-Regarding claims 9 and 19, the combination further discloses the information showing the communication method desirable to be changed is encrypted (**Although the combination does not specifically disclose the information is encrypted, it is obvious to one of ordinary skills in the art to encrypt the information improve the security of the data transmission**).

-Regarding claims 10 and 20, the combination further discloses including an identifying mark for identify the transmission device, wherein the identifying mark is used as a part of a key for the encryption (**Although the combination does not specifically disclose including an identifying mark for using as a key for the encryption, it is obvious to one of ordinary skills in the art to use public key and/or private key for encryption in order to improve the security of the data transmission**).

-Regarding claim 14, the combination further discloses the reception device divides original data into a plurality of pieces of data, puts information about an order in the original data to each one of the plurality of pieces of data, and changes a combination of a modulation method and a carrier frequency following a lapse of time in response to every piece of data for transmission, then receives each piece of data transmitted at the receiver, wherein the reception device includes a data restoring section for restoring each piece of data received

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at the receiver into the original data based on the information about an order
(Shunichi, as disclosed in abstract, paragraph (57)).

-Regarding claim 18, the combination further discloses a modulator for modulating data by a plurality of modulation methods **(Miki, ring modulator 8 as shown in fig. 5 and further disclosed in col. 5 lines 50-53)**; and wherein when the receiver receives the data together with information about a reception communication method desired by another device to change, a transmitter of the transmission device transmits data by switching the transmission communication method, to a method corresponding to the reception communication method desired to change **(Moon et al., as disclosed in fig. 7 and 13 and further disclosed in col. 25 lines 48-61).**

Response to Arguments

6. Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PING Y. HSIEH whose telephone number is (571)270-3011. The examiner can normally be reached on Monday-Thursday (alternate Fridays) 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lana N. Le can be reached on (571)272-7891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/P. Y. H./
Examiner, Art Unit 2618

/Lana N. Le/
Primary Examiner, Art Unit 2614